

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

priority Application Serial No. ....09/465,492  
priority Filing Date ..... December 16, 1999  
Inventor..... V. Segal  
Assignee.....Honeywell International, Inc.  
priority Group Art Unit..... 1742  
priority Examiner .....H. Wilkins III  
Attorney's Docket No. .... 30-5004 div2  
Title: Methods For Controlling The Texture Of Alloys Utilizing Equal Channel Angular  
Extrusion

**PRELIMINARY AMENDMENT**

To: Assistant Commissioner for Patents  
Washington, D.C. 20231

From: David G. Latwesen, Ph.D. (Tel. 509-624-4276; Fax 509-838-3424)  
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**AMENDMENTS**

**In the Specification**

Please replace the title with:

-- Methods For Controlling The Texture Of Alloys Utilizing Equal Channel Angular  
Extrusion --.

At p. 1, replace the paragraph starting at line 6, with

--This application is a divisional of U.S. Patent Application Serial No. 09/465,492,  
filed December 16, 1999; which is related to Application No. 09/098,761, filed June 17,  
1998.--

EL 844046665

## **In the Claims**

Please replace the indicated claims with the following clean versions of the claims, in accordance with 37 C.F.R. § 1.121(c)(1)(i). Cancel all previous versions of any pending claim.

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii). Any claim not accompanied by a marked up version has not been changed relative to the immediate prior version, except that marked up versions are not being supplied for any added claim or canceled claim.

## **CLAIMS**

Cancel Claims 1-36.

Please add new claims 37-41.

37. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least a route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected routes.

38. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and

recovery annealing the alloy at a temperature range and a time period determined for the alloy for obtaining substantially uniform grain size, global microstructure and texture.

39. (new) A method for influencing the texture evolution of a cast material alloy, comprising the steps:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route;

recovery annealing the alloy at a temperature range and a time period determined for the alloy; and

further recovery annealing the alloy at a temperature greater than maximum temperature of the temperature range.

40. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and

post-extrusion processing the alloy to create a specific texture, a uniform grain size and a high texture strength for the alloy.

41. (new) A method for controlling the texture of a cast material alloy, which comprises the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and

further processing the alloy under equal channel angular extrusion in order to create a specific texture, a uniform grain size and a high texture strength for the alloy.

## REMARKS

Claims 1-36 are cancelled; new claims 37-41 are added; and claims 37-41 are pending in the application.

Respectfully submitted,

Dated:

7/24/01

By:

*[Signature]*

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Reg. No. 38,533

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VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING  
PRELIMINARY AMENDMENT

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At p. 1, replace the paragraph starting at line 6 is amended as follows (underlines  
indicate insertions and strikeouts indicate deletions)

--This application is a divisional of U.S. Patent Application Serial No. 09/465,492,  
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**In the Claims**

The claims have been amended as follows. Underlines indicate insertions and  
~~strikeouts~~ indicate deletions.

Claims 1-36 are cancelled; and new claims 37-41 are added.